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Weekly Bulletin

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GUY P. JONES
Editor

CONTROL OF POLIOMYELITIS.*

By W. P. Shepard, M.A., M.D., City Health Officer, Berkeley.

Certainly the first step to be taken by the health officer in the face of a threatened poliomyelitis epidemic is to warn the practicing physicians and obtain their support and cooperation. Prestige is gained by making this approach as early as possible, since the individual physician will never know the situation outside of his own experience. In Alameda County, the fact that the health officers, led by Dr. Harry E. Foster of Oakland, approached the medical profession early in June, before the epidemic was apparent, and that the epidemic developed as predicted at that time, appeared to make some impression and possibly gained some support.

The practicing physician is not interested in reporting communicable diseases merely for the sake of record. Too often he feels that record-making, the manipulation of statistical machines and the dispensing of quarantine signs are the chief functions of the health department. If he can be made to see, on the other hand, that the tracing of contacts is important and can never be the function of other than a public agency, and that the health department is willing to have the odium of the quarantine act attached to them, and particularly if a prompt and satisfactory consultation service can be offered him in questionable cases, his cooperation is usually forthcoming. If, in addition to this, periodic reports on the situation can be sent him and if a clearing house for the collection of convalescent serum can be established in the health department, cooperation of the medical profession as a whole is almost assured.

It is a comparatively simple matter for the health department to note the cases of sufficient age who might be willing to donate small amounts of blood when convalescence is established and to request permission and assistance from the attending physician to obtain this whenever possible. It is no trouble to store the serum in the laboratory or keep a record of the amounts obtained by private physicians which may be available to others on short notice.

The leaders in the unorthodox systems of medicine and in the cults should not be forgotten. Regardless of personal beliefs, health officers will have nothing to gain from these practitioners who are recognized by law by ignoring them or antagonizing them unnecessarily.

Education of the Public.

Health officers are sometimes accused of conspiring with business interests to conceal the existence of an epidemic in their community. They should not be judged too harshly, however, either for claimed newspaper quotations which seem to prove this accusation, or for lack of newspaper publicity warning the public that an epidemic exists and listing the precautions necessary. A not uncommon attitude of the press seems to be that if an epidemic disease is so much as mentioned in their columns, the good name of the state is ruined. They fail to realize that by the hush attitude which they assume, the development of exaggerated reports in the community is inevitable. News items passed from mouth to mouth must always lose veracity from the very structure of human nature. A straightforward, frank newspaper report of existing conditions from an authoritative source did much in Berkeley to allay fear. This fear reached a pitch sufficient to cause one citizen to voluntarily stand guard at one of the school yards on the opening day and volubly warn pupils and their parents that the schools were unsafe since over a hundred cases of infantile paralysis existed in Berkeley. There were then three cases known to the health department.

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*Extract from a paper presented at Annual Conference of California Health Officers, Long Beach, October 1, 1925.

Lest we criticise the press too severely, however, it should be borne in mind that the newspaper editor is the specialist who presumably knows better than we what the public wants to read, and how to present a technical subject so that the public reads and understands it. He is usually a better educator of the public than the physician and his judgment should receive deference. He realizes better than we that his readers are largely made up of a majority whose army alpha tests averaged a surprisingly low mental age, who proclaim the sleek-haired movie sheik a greater hero than the college president, and who prove the most amazing books of fiction to be the year's best sellers. Editors will in time find that comments on the health of the community from an authoritative source have definite news value, and that a press bulletin on the health department letter-head does not invariably mean the sounding of an alarm or the ruination of business.

By whatever means are available then, the public should be kept informed of the true situation regarding poliomyelitis epidemics. As to preventive measures to be recommended to the anxious mother, those listed in the special bulletin of the California State Board of Health are clear-cut and offer reasonable safety. In addition to keeping children away from crowds and from other sick children, having them wash their hands invariably before they eat, isolating them upon the first signs of illness and teaching them to keep things out of their mouths as outlined in this bulletin, I would recommend adding a statement to the effect that home or school cafeteria are the best places for children to eat. The ice-cream cone, the candy bag and even the soda at the corner drug store present two possible menaces: first, that even when operating with health department approval, the sterilization of utensils and elimination of attendants at the public counter who may be ill are none too sure; and, second, that only too often the articles of food mentioned become the common property of a group of child friends who proceed then to exchange mucous secretions at a rate impossible in the school or home.

Isolation of the Case.

Regardless of individual feeling concerning the efficacy of commonly practiced control measures, it must be accepted at this time that poliomyelitis is a communicable disease and, therefore, the recognized cases must be quarantined. The technique of isolation is fully described in the California State Board of Health Bulletin No. 15 and is both clear and satisfactory. It must be recognized, however, that such a technique is beyond the limits of understanding of many nurse-mothers who are already distrait by the tragedy of the disease. It is here that the health department nursing staff becomes invaluable. We instruct our nurses that the period of quarantine is a most trying one for any family, and that they must visit the home during this time at frequent intervals for two purposes: first, to render any assistance they can to the unfortunate household and to show a friendly and helpful interest in their welfare; and second, to teach by demonstration the various items of the isolation technique and the concurrent disinfection. Thus, in the case of an ignorant mother, the nurse may find lengthy daily visits necessary before she can teach the proper procedure. With the practical methods of breaking the chain of transmission of disease once learned by a mother, a distinct step has been made in public health education. It may then be said that the quarantine period becomes the most valuable of all times for health educational purposes.

In an attempt to overcome the inherent reluctance of some physicians to call for assistance from the health department for fear of having their patients immediately quarantined, and at the same time to provide a satisfactory disposition of the many cases requiring isolation for further observation, a special procedure was adopted in Oakland and Berkeley at the suggestion of Doctor Harry E. Foster, Health Officer of Oakland. A small three by five card was posted near the doorbell on which was printed the following: "Warning. A condition suspected of being contagious exists in this house. The family and the health department will appreciate your cooperation by remaining off these premises until the removal of this card." (Dated and signed by the health officer.) A strict isolation was prescribed in these cases and the technique demonstrated by the nurse. This card was left until a positive or negative diagnosis could be made. When a positive diagnosis was made, it was replaced by the regulation quarantine sign. If the family failed to enforce the isolation requested, the warning card was replaced by a "Suspected" placard as permitted by state law. It was found in many cases, however, that the small warning card could be used without the family feeling resentment against their physician for having them quarantined, and at the same time it resulted in their observing a strict isolation. In many instances, housewives welcomed the assistance of the card in refusing visitors at the door. A favorable reaction was obtained to this procedure at a meeting of the county medical society.

The Contact.

Theoretically, if every person who has been exposed to a case of poliomyelitis could be isolated for two weeks' observation, there would be no epidemic. The chain of transmission would be broken with the appearance of the first crop of secondary cases. Practically, this is not so difficult as it may appear. It merely requires patience and persistence. It should be borne in mind that even though some contacts are missed and in developing the disease may again expose others, still by isolation of even some of the contacts, the normal expected geometric progression of the epidemic is interrupted. The fact that few secondary cases of poliomyelitis seem to appear among those exposed should not deter us from bending all efforts to locate and isolate every contact. Intensive epidemiological studies in certain districts outside of New York showed 88.8 per cent of the cases gave a history of direct or indirect contact with a previous case or with persons from an infected area. According to Lavinder, Wickman reports of 1031 cases, 14 families had 4 cases, 7 families had 5 cases and 1 family had 8 cases. Table 65 in Lavinder, Freeman and Frosts' monograph shows that those in the immediate environment of the case of poliomyelitis suffer a rate of incidence six times as great as does the general population, not including the possible abortive cases. To be sure, in scarlet fever, the incidence rate of those in the immediate family is thirty-seven times as great and in diphtheria twenty-two times as great as in the general population.

The procedure in Berkeley is to sit down with the mother when the first opportunity for her to be undisturbed presents itself and explain the vital importance of the information which we seek. We ask her to try to recall every place the child has been, who has visited the child since the date of onset and the name or location of every child who may have been a contact. After taking ample time to gain the information, the importance of it is again stressed and the mother asked to keep the matter in mind. The following day she is again asked for the names of any other contacts which may have occurred to her. On the third visit, the same question is asked once more.

Each of the contacts outside the quarantined household are then visited by the nurse. The situation is explained carefully and the cooperation of the mother asked in keeping the exposed children out of school and isolated from other children for a period of two weeks. The mother is asked to notify the health office immediately should symptoms of illness occur and the child is seen by the nurse frequently during this period. When the family is too ignorant to understand such a request a "Keep Out" sign is affixed and the premises declared in state of quarantine, as a case of suspected communicable disease. Our experience has been that when the seriousness of the situation is properly presented to the mother, she is almost invariably willing and glad to cooperate.

The Suspected or Missed Case.

Under this heading we come to what is probably the most important problem in poliomyelitis control. Different observers have estimated a varying number of the so-called abortive or nonparalyzed cases. That such cases exist and are capable of transmitting the disease to others, there can be no doubt. When one repeatedly sees families with several children, three or four of whom become sick almost simultaneously with similar onset symptoms, and but one of the three or four children shows paralysis, he is soon convinced of the existence of the abortive type of case. When one sees cases with typical onset symptoms including fever, vomiting and neck and spine stiffness and some disturbance of the reflexes, showing only a partial paralysis of one small group of muscles which disappears completely within three or four days, he can not but feel that there are many mild cases which are never recognized.

It has been estimated that for every paralyzed case of poliomyelitis, there are possibly three or four nonparalyzed cases. It is a common observation that during poliomyelitis epidemics there may be among children a considerable number of cases of acute illness of some kind often associated with gastro-intestinal symptoms. Also it appears to be a fact, that the number of school days lost by children on account of illness seems to increase during poliomyelitis epidemics at a rate not entirely accounted for by the cases themselves. It has, therefore, seemed to me quite possible that in place of three or four of the abortive cases to one paralyzed case, there may possibly be eight or ten such cases. One authority believes that our present practice of diagnosing poliomyelitis only when paralysis appears might be likened to a custom of diagnosing typhoid fever only when perforation occurs.

If we assume as an example that poliomyelitis is as contagious as measles and compare the attack rates during epidemic times in a city, we find that it apparently takes about fifteen cases of measles per one thousand population to saturate the community sufficiently to produce a recession of the epidemic. An attack rate of 1.61 per one thousand population was apparently sufficient to produce a spontaneous subsidence of the 1916 poliomyelitis epidemic in New York. On this basis, comparing the attack rate of poliomyelitis with that of measles, and assuming the two diseases to be of equal contagiability, there would be approximately eight abortive cases to each paralyzed case. It seems at this time, not only possible, but likely that poliomyelitis is a very common, highly contagious disease of childhood and that paralysis is a comparatively rare complication. Such an hypothesis would solve many of the mysteries now confronting us, but would add urgency to the necessity of finding the etiological factor and a means of early diagnosis. Such a conception, however, gives a discouraging outlook upon attempts at control.

With this in mind, and believing that such abortive cases were possibly of much shorter infectivity than the more severe, paralyzed case, a rule was passed in Berkeley at the opening of school that all children developing fever of unknown origin were to be excluded for a period of five school days. This resulted in at least seven days of isolation and gave an opportunity to observe the case long enough to require further exclusion if suspicious symptoms developed. A total of approximately three hundred children were excluded under this rule, among whom three cases of poliomyelitis developed without producing apparent exposure in the schools. In fact, there has occurred no known school contact in Berkeley thus far. The epidemic has declined steadily since the opening of schools.

The above precaution practically depended upon voluntary cooperation from the parents of the excluded child. Among all the suspects thus excluded, there was not an objection on the part of such parents after the reasons for the action had been explained. Many parents expressed gratification in the demonstration that the health department was exercising due precautions.

In addition to this action, pupils absent on account of illness were refused admittance to classes until a reinstatement slip from the nurse was presented. All three-day absentees were visited in the home to ascertain the reason for their absence. Private physicians were given advance notice of these actions with the reasons for their adoption and furnished splendid cooperation.

COMMUNICABLE DISEASE REPORTS.

Disease	1925				1924			
	Week ending			Reports for week ending Nov.21 received by Nov.24	Week ending			Reports for week ending Nov. 22 received by Nov. 25
	Oct. 31	Nov. 7	Nov. 14		Nov. 1	Nov. 8	Nov. 15	
Anthrax	1	0	0	0	0	0	0	1
Botulism	0	0	0	0	0	0	0	0
Chickenpox	130	210	173	239	180	244	201	243
Diphtheria	117	136	128	111	148	215	188	163
Dysentery (Bacillary)	0	1	4	0	0	0	10	0
Epidemic Encephalitis	2	2	3	0	3	6	1	4
Epidemic Meningitis	0	0	3	2	4	3	1	2
Gonorrhoea	144	134	81	233	257	102	75	72
Influenza	15	6	20	17	14	15	14	29
Leprosy	0	0	1	0	0	0	0	0
Malaria	2	2	1	0	1	1	2	0
Measles	14	13	13	17	20	35	24	35
Mumps	130	161	203	165	54	64	66	105
Pneumonia (lobar)	33	44	63	35	55	64	114	54
Poliomyelitis	4	11	17	13	17	10	10	7
Scarlet Fever	72	102	124	146	100	131	112	131
Smallpox	32	32	66	39	72	105	98	95
Syphilis	142	212	105	200	145	68	166	131
Tuberculosis	158	183	166	195	205	136	179	116
Typhoid Fever	12	16	14	15	19	27	23	81
Whooping Cough	54	71	56	22	82	76	74	91
Totals	1062	1336	1241	1449	1376	1302	1358	1360

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